```
#--------project 1 start ----------
def add(a, b):
  return a + b


def subtract(a, b):
  return a - b


def multiply(a, b):
  return a * b


def divide(a, b):
  if b == 0:
     return "Error: Division by zero is not allowed."
  return a / b


def modulus(a, b):
  if b == 0:
     return "Error: Division by zero is not allowed."
  return a % b




# Calcualator function
def calculator():
  while True:
     # Display the operation menu
     print("Select operation:")
```

```
print("1. Add")
print("2. Subtract")
print("3. Multiply")
print("4. Divide")
print("5. Modulus")
print("6. Exit")

# User input for choice
choice = input("Enter choice (1/2/3/4/5/6): ")

# Check for exit
if choice == '6':
    print("Exiting the calculator.")
    break

# Input validation for choice
if choice not in ['1', '2', '3', '4', '5']:
    print("Invalid choice. Please choose a valid option.")
    continue

try:
    # User input for numbers
    num1 = float(input("Enter first number: "))
    num2 = float(input("Enter second number: "))
except ValueError:
    print("Invalid input. Please enter numeric values.")
    continue

# Perform the chosen operation
if choice == '1':
    result = add(num1, num2)
    print(f"{num1} + {num2} = {result}")
elif choice == '2':
```

```
            result = subtract(num1, num2)
            print(f"{num1} - {num2} = {result}")
        elif choice == '3':
            result = multiply(num1, num2)
            print(f"{num1} * {num2} = {result}")
        elif choice == '4':
            result = divide(num1, num2)
            print(f"{num1} / {num2} = {result}")
        elif choice == '5':
            result = modulus(num1, num2)
            print(f"{num1} % {num2} = {result}")

        print()


if __name__ == "__main__":
  calculator()




#project 2 start---------


# Import Library
import random


def game():
  rand = random.randint(1, 100)
  cnt = 0
```

```
  while True:
      guess = input("Enter your guess: ")
      guess = guess.strip()
      cnt += 1

      try:
          guess = int(guess)
          if guess == rand:
              print(f"Congratulations! You've guessed the number in {cnt} attempts.")
              break

          elif rand > guess:
              print("Too Low!")
          elif rand < guess:
              print("Too High!")
      except ValueError:
          print("Please enter a valid integer.")


# Start the game
if __name__ == "__main__":
    game()


# Link 1: https://github.com/Arafat2222/OstadAssignment/blob/main/Assignment1/calculator.py


# Link 2: https://github.com/Arafat2222/OstadAssignment/blob/main/Assignment1/game.py
```